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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/712,888	11/15/2000	James Nolan	1-2-148.1US	5233

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VOLPE AND KOENIG, P.C.
DEPT. ICC
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EXAMINER

SHAAWAT, MUSSA

ART UNIT PAPER NUMBER

2128

DATE MAILED: 08/26/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/712,888

Applicant(s)

NOLAN ET AL.

Examiner

Mussa A Shaawat

Art Unit

2128

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 November 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 November 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 15 November 2000.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

1. This action is responsive to application number 09/712,888. Claims 1-22 are presented for examination.

Specification

The abstract is objected to because it exceeds 150 words. Appropriate action is required.

Claim Interpretation

2. The examiner notes that upon further examinations of the claims the terms “emulation” and “simulation” is interpreted as a programmable signal generator and a world system.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 1-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Harvey H. Harris US Patent No. (3,956,601) referred to hereinafter as Harris.

As to claim 1, Harris teaches an emulator for use in digital communication design, optimization, and validation comprising: transmitter impairments emulation, see Harris (col.5 lines 55-67, et seq.); a transmitter interface, see Harris (col.6 lines 33-42, et seq.); receiver impairments emulation, see Harris (col.6 lines 1-67, et seq.); and a receiver interface, see Harris (col.6 lines 33-42 et seq.).

As to claim 2, Harris teaches an emulator for modeling a plurality of signal impairments which manifest themselves onto a communication data signal between modulation and

demodulation in a communication system, the emulator comprising: a plurality of programmable transmit modules emulating a plurality of signal impairments that occur during communication media modulation, each said transmit module having a signal input for coupling with a transmit modem, an output and a communication bus coupling, see Harris (col.10, lines 33-43); a plurality of programmable receive modules emulating a plurality of signal impairments that occur during communication media demodulation, each said receive module having a signal input, an output for coupling with a receive modem and a communication bus coupling, see Harris (col.6 lines 43 56); a user interface communicating with a processor for defining a communication system simulation by soft coupling a required number of said transmit and receive modules in a user defined simulation arrangement using said transmit module outputs and said receive module inputs, see Harris (col.6 lines 56-65); and said processor instructing each of said required modules via a communication bus to use specific signal impairments from said plurality of respective signal impairments for said user defined simulation arrangement, see Harris (col.10 lines 62-67, col.11 lines 1-36).

As to claim 3, Harris teaches an emulator according to claim 2 wherein said plurality of transmit module impairments further comprise linear impairments, see Harris (col.5 lines 35-56, col.7 lines 1-67).

As to claim 4, Harris an emulator according to claim 3 wherein said transmit module linear impairments further comprise: amplitude imbalance, see Harris (col.5. lines 63-64); bandwidth group delay, see Harris (col.5. line 30); bandwidth limitations; carrier frequency offset, see Harris (col.5. line 30); carrier leakage; carrier phase imbalance, see Harris (col.5. line

27); carrier phase noise, see Harris (col.5. line 26); carrier phase offset modem noise; and transmitter noise, see Harris (col.5 lines 20-35).

As to claim 5, Harris teaches an emulator according to claim 4 wherein said plurality of transmit module impairments further comprise non-linear impairments, see Harris (col.5 lines 35-56, col.7 lines 1-67).

As to claim 6, Harris teaches an emulator according to claim 5 wherein said transmit module non-linear impairments further comprise: amplitude modulation to amplitude modulation; and amplitude modulation to phase modulation, see Harris (col.4 lines 58-67, col.6 lines 1-10, col.9 lines 30-50).

As to claim 7, Harris teaches an emulator according to claim 6 wherein said plurality of receive module impairments further comprise linear impairments, see Harris (col.5 lines 35-56, col.7 lines 1-67).

As to claim 8, Harris The emulator according to claim 7 wherein said receive module linear impairments further comprise: amplitude imbalance; bandwidth group delay; bandwidth limitations; carrier frequency offset; carrier dc offset; carrier phase imbalance; carrier phase noise; carrier phase offset modem noise; and receiver noise, see Harris (col.5 lines 20-35).

As to claim 9, Harris teaches an emulator according to claim 8 wherein said plurality of receive module impairments further comprise non-linear impairments, see Harris (col.5 lines 35-56, col.7 lines 1-67).

As to claim 10, Harris teaches an emulator according to claim 9 wherein said receive module non-linear impairments further comprise: amplitude modulation to amplitude

modulation; and amplitude modulation to phase modulation, see Harris (col.4 lines 58-67, col.6 lines 1-10, col.9 lines 30-50).

As to claim 11, Harris teaches an emulator according to claim 10 further comprising a plurality of programmable media modules emulating a plurality of signal impairments that occur during signal transmission through a communication channel media, each said media module having a signal input for coupling with the output of a transmit module, a signal output for coupling with the input of a receive module and a communication bus coupling for coupling with said communication bus, see Harris (col.10, lines 33-43).

As to claim 12, Harris teaches an emulator according to claim 11 wherein said media module emulates guided and unguided communication channel media impairments, see Harris (col.9 lines 5-26).

As to claim 13, Harris teaches an emulator according to claim 12 wherein said guided media impairments comprise attenuation and delay, see Harris (col.9 lines 28-50).

As to claim 14, Harris teaches an emulator according to claim 13 wherein said unguided media impairments comprise value fluctuation, location characteristics and distance characteristics, see Harris (col.9 lines 30-67, col.10 lines 1-12).

As to claim 15, Harris an emulator for modeling at least one signal impairment which is manifest onto a communication data signal between modulation and demodulation in a communication system, the emulator comprising: at least one programmable transmit module emulating at least one signal impairment that occurs during communication media modulation, said at least one transmit module having a signal input for coupling with a transmit modem, an output and a processor interface, see Harris (col.10, lines 33-43); at least one programmable

receive module emulating at least one signal impairment that occurs during communication media demodulation, said at least one receive module having a signal input, an output for coupling with a receive modem and a processor interface, see Harris (col.6 lines 43 56); and a processor, with associated memory, for configuring said transmit and receive modules via selected characteristics stored in memory, see Harris (col.6 lines 56-65).

As to claim 16, Harris teaches an emulator of claim 15 wherein said at least one transmit module impairment emulates a dynamic impairment, see Harris (col.5 lines 35-56, col.7 lines 1-67).

As to claim 17, Harris teaches an emulator of claim 16 wherein said dynamic impairment comprises at least one of the following of sine waveform; swept sine waveform; square waveform; sawtooth waveform; or impulse waveform, see Harris (col.9 lines 40-45).

As to claim 18, Harris teaches an emulator of claim 15 wherein said at least one receive module emulates a dynamic impairment, see Harris (col.6 lines 20-32).

As to claim 19, Harris teaches an emulator of claim 18 wherein said dynamic impairment comprises at least one of the following of sine waveform; swept sine waveform; square waveform; sawtooth waveform; or impulse waveform, see Harris (col.9 lines 40-45).

As to claim 20, Harris teaches an emulator of claim 15 further comprising at least one programmable media module emulating at least one signal impairments that occur during signal transmission through a communication channel media, each said media module having a signal input for coupling with the output of a transmit module, a signal output for coupling with the input of a receive module and a processor interface, see Harris (col.10, lines 33-43).

As to claim 21, Harris teaches an emulator of claim 15 wherein said at least one transmit module impairment further comprises a linear impairment, see Harris (col.5 lines 35-56, col.7 lines 1-67).

As to claim 22, Harris teaches an emulator according to claim 16 wherein said transmit module linear impairments further comprise at least one of the following of amplitude imbalance; bandwidth group delay; bandwidth limitations; carrier frequency offset; carrier leakage; carrier phase imbalance; carrier phase noise; carrier phase offset; modem noise; or transmitter noise, see Harris (col.5 lines 20-35).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Lepitre US Patent No. (5,881,066) system for testing a transmission link.
- Biessman et al. US Patent No. (5,163,051) Paired bet error rate tester.
- Kahkoska et al. US Patent No. (6,002,671) test instrument for testing asymmetric digital subscriber lines.
- Yip et al. US Patent No. (6,374,375) Monitoring line conditions in the data transmission mode.
- Somasegar et al. US patent No. (5,862,362) network failure simulator.
- Harald et al. US Patent No. (6,466,925) method and means for simulation of communication systems.
- Borella et al. US Patent No. (6,442,141) network delay and loss simulator.

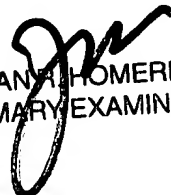
Communications

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mussa A Shaawat whose telephone number is (703) 605-1372. The examiner can normally be reached on Monday-Friday (8:30am to 5:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jean R Homere can be reached on (703) 308-6647. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mussa Shaawat
Examiner
August 20, 2004


JEAN R HOMERE
PRIMARY EXAMINER